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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,545	10/24/2003	Jae-Hyun Jung	1572.1142	6871
21171 7590 03/19/2007 STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EXAMINER CHOW, LIXI	
			ART UNIT	PAPER NUMBER
			2627	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/19/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/691,545

Applicant(s)

JUNG ET AL.

Examiner

Lixi Chow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

1. Claims 1-21 are pending in this application.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (AAPA) in view of Terashi et al. (US 6,728,185; hereafter Terashi).

Regarding claim 1:

AAPA discloses a coma aberration correcting apparatus (see Fig. 1) of an optical pickup including an optical pickup main body having a photo diode, and an actuator mounted on an objective lens focusing a beam emitted from the photo diode onto a recording medium, the coma aberration correcting apparatus comprising:

a main supporting unit (Fig. 1, element 120) detachably supporting the optical pickup main body;

a holding unit (Fig. 1, element 130) holding and releasing the actuator on the optical pickup main body supported by the main supporting unit;

an optical system (Fig. 1, element 140) magnifying and photographing the beam emitted from the photo diode through the objective lens of the actuator held by the holding unit; and

a driving part (Fig. 1, element 110) adjusting a position of the actuator relative to the optical pickup main body.

AAPA fails to disclose a controller for controlling the driving part, because a person manually operates the driving part. However, Terashi discloses a device for assembling and adjusting an optical unit comprising a focus/track signal sensing system for controlling a positional relation between the object lens and the disk to thereby correct astigmatism (see Fig. 1, element 19, and col. 3, lines 49-51).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the coma aberration correcting apparatus of AAPA to include an automated controller for controlling/adjusting the optical unit as suggested by Terashi. One of ordinary skill in the art would have been motivated to do this, because adjustment of the driving part and correction of the astigmatism can be accomplished quickly and automatically in a uniform fashion, therefore increase productively.

Regarding claim 2:

AAPA discloses the coma aberration correcting apparatus, wherein the driving part comprises:

an X-axis stage and a Y-axis stage moving the actuator horizontally, a Z-axis stage moving the actuator vertically, and an R-axis stage and a T-axis stage adjusting an inclination of the actuator (see paragraph [0023]).

Regarding claim 3:

AAPA discloses the coma aberration correcting apparatus, wherein the holding unit comprises:

a holding part (Fig. 2, element 131) holding the actuator by a magnetic force, and a cylinder unit (Fig. 2, element 133) adjacent to the holding part and controlling the magnetic force of the holding part (see paragraph [0016]).

Regarding claim 4:

AAPA discloses the coma aberration correcting apparatus, wherein the optical system comprises:

a low magnification camera (Fig. 1, element 141), and a high magnification camera (Fig. 1, element 143) having a magnification higher than the low magnification camera, wherein the low and high magnification cameras magnify and photograph the beam emitted from the photo diode through the objective lens of the actuator (see paragraph [0020]).

Regarding claims 5 and 6:

AAPA discloses the coma aberration correcting apparatus, wherein a worker controls the X-axis and Y-axis stages until the low magnification camera captures the beam, controls the X-axis and Y-axis stages to centrally photograph the beam using the low magnification camera, controls the Z-axis stage to photograph the beam using a low magnification of the low magnification camera, controls the X-axis and Y-axis stages to centrally photograph the beam using the high magnification camera, controls the Z-axis stage to photograph the beam using a maximum brightness of the high magnification camera, and controls the R-axis and T-axis stages to photograph the beam using a minimum coma aberration of the high magnification camera (see paragraph [0026]); and calculates a coma aberration value based on a centroid difference between beam images having the minimum coma aberration and a beam image having some coma aberration, where the beam images having the minimum coma aberration and the beam

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image having some coma aberration are captured by the high magnification camera, and determines whether the actuator passes inspection by comparing the calculated coma aberration value with a predetermined reference value (see paragraph [0027]; the calculation and the comparison is done by a skilled worker).

AAPA does not disclose a controller for automatically controlling the driving part. However, Terashi discloses a device that automatically adjusts the optical unit. Therefore, it would have been obvious to combine the teaching of AAPA and Terashi. The reason to combine the teachings is same as the reason set forth in claim 1.

Regarding claims 7-10:

Claims 7-10 recite similar limitations as in claims 3-6; hence, claim 7-10 are rejected under the same reason set forth in claims 3-6.

Regarding claim 11:

AAPA does not, but Terashi discloses a device for assembling and adjusting an optical unit comprising a driving part, wherein the driving part comprises driving motors to adjust the position of the objective lens (see col. 3, line 55 to col. 4, line 3).

At the time the invention was made, it would have been obvious to modify the apparatus of AAPA, such that the driving part includes driving motors as suggested by Terashi. The reason to combine the teachings is same as in claim 1.

Regarding claim 12:

AAPA discloses the coma aberration correction apparatus, further comprising:

a pair of projections operably connected to the actuator when the optical pickup main body is supported by the main supporting unit, and a through hole through which the holding unit passes to hold the actuator (see paragraph [0012]).

Regarding claims 13 and 14:

AAPA discloses the coma aberration correction apparatus, wherein the driving part is provided under the holding unit (see Fig. 1), and a worker drives the driving part in the X-axis, Y-axis, and R-axis to correct the coma aberration of the object lens (see paragraph [0026]).

AAPA fails to disclose a controller connecting to the driving part for automatically adjusting the position of the actuator and a position of the object lens; however, Terashi discloses a device for assembling and adjusting an optical unit comprising a driving part that is connected to the controller, wherein the controller is coupled to the driving direction using cables to control the driving part to correct astigmatism of the objective lens (see Fig. 1, element 19 includes a driving part and a controller, also see col. 3, lines 55-58; it is inherent that the fine moving mechanism and the rough moving mechanism is connected to the controller via cables).

The reason to combine the teachings is same as reason set forth in claim 1.

Regarding claims 15-20:

AAPA discloses the coma aberration correction apparatus further comprising:

a low magnification camera photographing the beam, wherein a worker processes the beam photographed by the low magnification camera and controls the X-axis and Y-axis stages until the beam emitted from the photo diode through the objective lens of the actuator is captured by the low magnification camera, wherein the worker controls the X-axis, Y-axis, and Z-axis stages to adjust a focus and a position of the beam photographed by the low magnification

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camera; and a high magnification camera photographing the beam, wherein a worker processes the beam photographed by the high magnification camera, controls the X-axis, Y-axis, and Z-axis stages to finely adjust a focus and a position of the beam from the photo diode, and controls the R-axis and T-axis stages to correct the coma aberration based on the beam photographed by the high magnification camera, wherein the worker calculates a coma aberration value on a basis of a centroid difference between a beam image having approximately zero coma aberration and a beam image having some coma aberration, which are captured by the high magnification camera (see paragraph [0026]).

AAPA fails to disclose a controller for automatically adjust the driving parts, but Terashi discloses a device for assembling and adjusting an optical unit comprising a controller (see Fig. 1, element 19 includes a controller) for automatically controlling a driving part (see col. 3, lines 56-57; the moving mechanisms are the driving part), wherein the controller controls the position of the objective lens to thereby correct astigmatism (see col. 3, lines 55-57), the controller comprises a computer having a control program to control the controller to correct the astigmatism (it is inherent that the controller of Terashi includes a computer).

The reason to combine the teachings is same as reason set forth in claim 1.

Regarding claim 21:

AAPA discloses a coma aberration correcting apparatus (see Fig. 1) of an optical pickup including an optical pickup main body having a photo diode, and an actuator mounted on an objective lens focusing a beam emitted from the photo diode onto a recording medium, the coma aberration correcting apparatus comprising:



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a driving part adjusting position of the actuator relative to the optical pickup main body; and the driving part corrects the coma aberration of the objective lens (see paragraphs [0023]-[0026]).

AAPA does not disclose a controller for automatically adjust and without human intervention a position of the actuator. However, Terashi discloses a device for assembling and adjusting an optical unit comprising a controller (see Fig. 1, element 19 includes a controller) for automatically controlling a driving part without human intervention (see col. 3, line 55 to col. 4, line 3).

The reason to combine the teachings is same as reason set forth in claim 1.

#### *Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kawano (US 7,054,236) is cited, because Kawano teaches a manufacturing method and adjusting method of optical pickup.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lixi Chow whose telephone number is 571-272-7571. The examiner can normally be reached on Mon-Fri, 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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SUPERVISORY PATENT EXAMINER